

Australian Strategic Electric Vehicle Integration Project (SEVI)

RACE for
2030
EVs

The Australian Strategic Electric Vehicle Integration Project (SEVI) will investigate ways to integrate EVs with renewable energy generation and storage that have promise for scalability and replicability.

This will be done through on-the-ground demonstrations led by Cooperative Research Centre (CRC) partners in NSW, SA and WA.



Australian Government
Department of Industry,
Science and Resources

AusIndustry
Cooperative Research
Centres Program

RACE brings together the whole energy value chain to coordinate and facilitate

- Knowledge sharing
- Market transformation
- Impact



The opportunity

The adoption of Electric Vehicles (EVs) is growing rapidly worldwide, driven by aspirations of countries to decarbonise their transport sectors, and the growing affordability and extended range of EVs.

As uptake of EVs accelerates, fundamental challenges are emerging that may slow the successful integration of EVs into our society.

Like other Distributed Energy Resource (DER) solutions (such as demand flexibility, rooftop solar and battery storage), the integration of EVs into our homes, businesses, and electricity networks presents both a range of opportunities and challenges.

The SEVI project will investigate ways to integrate EVs with renewable energy generation and storage that have promise for scalability and replicability.

The project will:

- 2023: conduct an initial period of research and co-design
- 2024: support on-the-ground demonstrations led by RACE for 2030 partners in NSW, SA and WA and focus on use cases of EVs in Fleets, Precincts, and Regions
- 2025: see the findings from each demonstration assimilated into an industry report and video.



3 demonstration projects – EVs in Fleets, Precincts, Regions



EVs in Fleets (NSW):

This demonstration will focus on the inclusion of EVs in business fleets in both at-work and at-home charging settings, with optional support from a mix of energy storage options.



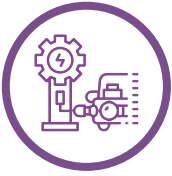
EVs in Precincts (WA):

This demonstration will focus on private EVs that form part of residential precincts and developments with embedded networks, with optional support from a mix of behind-the-meter and front-of-meter storage options.



EVs in Regions (SA):

This demonstration will focus on private EVs in regional locations that interact with behind-the-meter energy storage. Of particular interest is how EVs and private storage in holiday parks can be orchestrated to provide town wide benefits.



Uncovering the wider value of integrating EVs

Through three partner led demonstrations, the SEVI project aims to apply insights from earlier research on EVs and identify specific lessons. These findings can be used to begin bridging the gaps in our understanding of how these revolutionary technologies will integrate with our energy system and wider society.

By investigating on-the-ground demonstration projects that are likely to scale and replicate across Australia, the SEVI project aims to move applied research beyond the early adopters of EVs and begin uncovering the extent of the cost, impact and wider value that can be captured from the strategic integration of EVs.

Results from this project will:

- build understanding and confidence in the benefits of integrated EVs among consumers, industry, and policymakers
- provide knowledge sharing and communication of key findings throughout the project and will inform wider practice through avenues including demonstration site industry reports, digital media, TV-ready videos and industry training modules
- provide specific research plans, findings and industry report for each on-the-ground demonstration project to enable application and scalability at other sites.



Outputs and outcomes

Research plan and support for each partner-led demonstration project:

The project will develop companion research plans and directly support a set of partner-led demonstration projects. The plans and support will seek to enhance the design, implementation, and assessment of the demonstration projects, while sharing valuable lessons with the industry.

Specific investigations to strengthen value proposition for EVs:

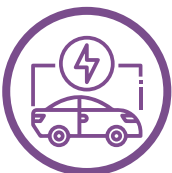
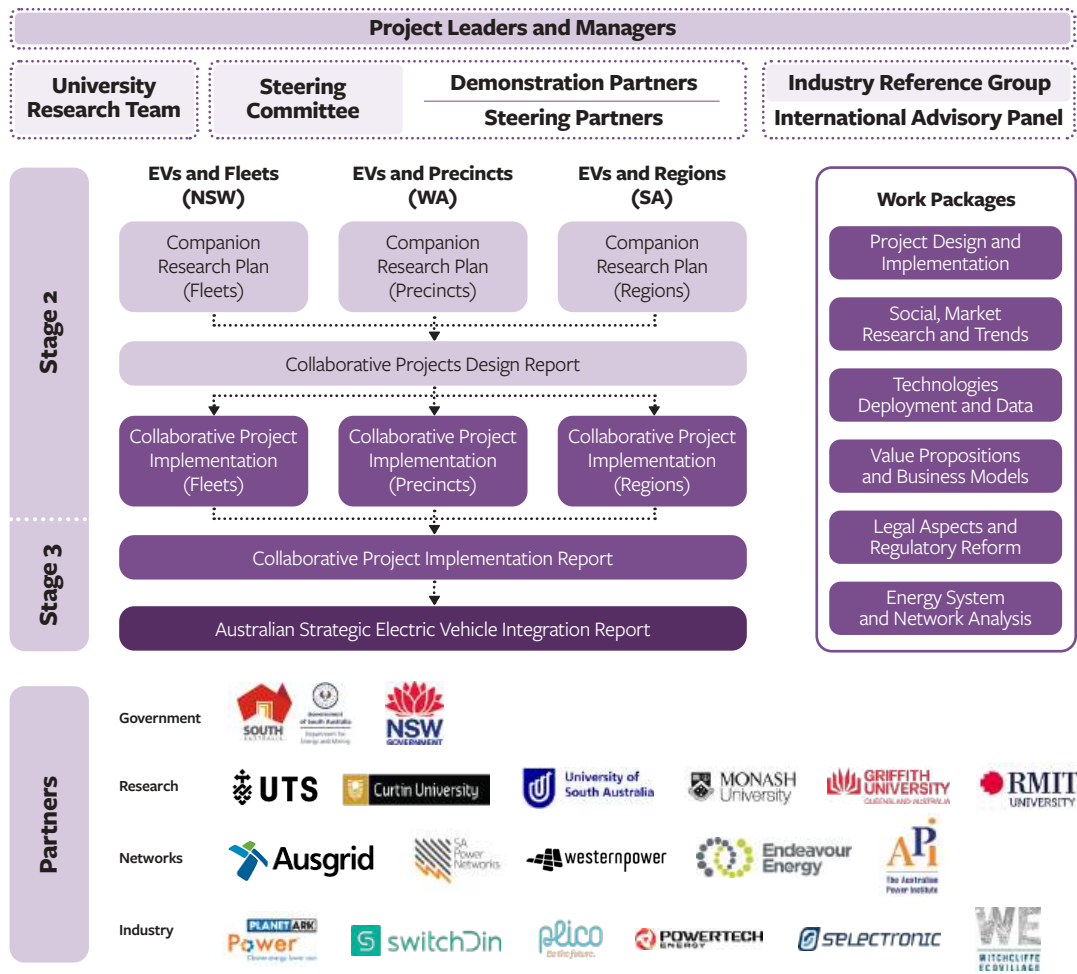
The project seeks to build understanding and confidence in the benefits of integrated EVs among consumers, industry, and policymakers, through the investigation of specific research questions as identified with CRC partners.

Case studies to inform wider practice:

- 1 project report: Final project report including outcomes, lessons learnt and transferable tools to assist in replicability
- 3 demonstration site industry reports: Providing succinct, practical key research findings to participating partners and stakeholders that are easily transferable into short media pieces
- 3 TV-ready short videos involving partners and findings – packaged in various formats
- capacity building module of 6 units with Australian Power Institute including background information, key learnings, infographics, review questions and key resources.



The research format



The impact

Managed charging of Australia's growing EV fleet may allow for more efficient use of energy infrastructure and improved network hosting capacity.



Australia's decentralised energy transition is well underway with important questions being raised that warrant careful and practical consideration.

This project will focus on specific challenges associated with live partner-led projects in order to inform current and future practice in the energy sector both here in Australia and overseas in collaboration with the Industry Reference Group and International Advisory Panel.